



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

My herbarium and its one enemy

J. A. BATES

My herbarium is sixty years old this spring. It contains specimens from many countries, from Alaska, and the top of North Cape, and the Himalaya Mountains to New Zealand, and the crater of the Hawaiian volcano. It has traveled thousands of miles, and has lodged in scores of different houses. Yet, so far as its experience goes, I can speak of "Its One Enemy."

For two of its sixty years, there was war with that one. For fifty-eight no enemies have appeared to disturb its peace. They have been around it. For two years it was in a hot country, where insect life was abundant. A crocodile, nine feet long, was killed one morning on the verandah of the house where the herbarium was lodged, and the other *insects* were legions. (Buffon's only proof, that the crocodile was not an insect was, "He is too large." Plainly not a scientific argument.)

This rare peaceful history seems more peculiar from the fact that I have for only twenty years poisoned plants for my own herbarium. In those early days we never heard of insects injuring an herbarium. Perhaps it was because then "Ignorance was bliss." But it was true in college "Natural Philosophy" days before Darwin taught us of evolutionary laws and before the Cambridge professor practised them, with the gypsy moth, out of the window.

Some credit for this may have been due to these things. We mounted our specimens then, on double sheets of thin, but not pulpy or glazed paper. We fastened them by stitching with linen thread, not by smearing with Chicago "fish glue" or Pennsylvania "gum Arabic" paper to attract enemies. And then my herbarium was kept

for years in a tight case made of black walnut, which is said to be disagreeable to the taste, or smell senses, of insect life.

But about twelve years ago, suddenly I discovered that a new enemy had attacked my herbarium. He first appeared in the shape of a little brown or chestnut-colored beetle, about one-tenth of an inch long, with a small head and bright eyes. He was an active, wide-awake athlete—on the race course—an artful dodger, an educated West Point military tactician, and an experienced field botanist.

When cornered he would roll up into a ball in a little of the dust he had made, so that only sharp eyes could see him. He made regular subterranean approaches with galleries here and there through genus covers, and sheets. And the fellow even seemed to know which was the rare little plant, and to stop and eat off its head when passing by common things.

A reinforcement soon appeared on the enemy's side. Little wigwams were built up on the plants with walls of plant dust, and in each appeared a white grub, who soon proved himself worthy of his ancestry.

I experimented with them for months. As to food they were regular ravening wolves. The honey clovers, and the strongest mints, the bitterest Compositae, and the "deadly" umbels, the Solanums, and even a fine specimen of the hellebore, most half a century old, all were sweet morsels to them. I think they were careful not to provoke me too much, as they only skirmished a little in my pet ferns, 500 in number. But they ruined a third of my 50 Solidagos, and a quarter of my 100 grasses, and made lint of some dozen beauty thistles.

I tried to fight back. I bottled beetles and experimented with them, gave them shower baths of kerosene and alcohol and turpentine, painted one white with a double solution of arsenic, and fed it to another with a stick. And they one and all went on their way rejoicing.

Of course, I soon appealed to Washington for help and sent them several invoices of specimens. The authorities there told me in substance, that I was one of the few privileged mortals who had made the acquaintance of the "*Ptinus fur*, or white marked spider beetle."

Some of their descriptions did not seem to fit my associates. They said the "four white lines" distinguished him. I couldn't find any. But they said they were on its "elytra," and I could not find that. They said "it strongly resembled a spider in appearance." If it had not the two middle legs I should as soon called it horse beetle. They told of its "larva" tunnelling. I think my beetles did the tunnelling, the grubs stayed at home and "waxed fat."

They agreed with me as to their being omnivorous, even adding a long list of high class provisions like "all druggist's stores," "cotton and wool," "fruit," "boots and shoes," belladonna and "tobacco," "Rye bread" and "especially partial to red pepper." They tell us it is even said "they will eat anything except cast iron" and "the late Dr. Hagen wrote "that he once saw a whole shelf of theological books, 200 years old, traveled through transversely by the larvae of this insect."

They were harder on him than I am. My larvae and my beetles too did not go to forage away from the herbarium. Close by was a shelf of books, some of them theological too, one twice as old as those of Dr. Hagen (1544). And on the herbarium case was a row of books mostly new theological, and not one book of mine was ever perforated.

I asked Washington where my *Ptinus* came from. They suggested foreign plants. But the herbarium from which my foreigners came, has never known him. They suggested also refuse heaps, even saying politely "it seems probable there is some neglected corner or breeding place in your house, in the garret, or old barn, or

between the floors, from which in the middle of the night I might find the procession traveling to my herbarium." Providentially my house had no garret, and there was no old barn near it. And as it was a hired house I couldn't tear up the floors, so I employed my midnight hours in other business.

I asked, of course, how to get rid of them, and after a year had passed, and I had reported and questioned several times, the Doctor said, "the best I can advise you now is that you follow out the directions given in regard to the household ants in Bulletin." His letter came just after I had mailed (at request), to one of his assistants, a bottled and tinned package. It seemed to show in several passages such as those I have quoted, either in ignorance or at least lack of proper respect for the *Ptinus* and his associates that it was not gratefully received.

One other quotation said "I am pleased with the fact that my prediction that the beetles would probably attack the '*Filices*' after others, has been verified. I never knew he had so predicted and was not "pleased." But the assistant was a gentleman and "in the doctor's absence" he helped me by telling me of *fur* and Co.'s "mite" enemies, and suggesting one other poison, which gave us the victory. I dropped the attack on the beetles, and like Napoleon and Grant, and like General "Heteropus ventriccosus," (a diminutive mite) who with comrades so rules at Washington (probably not nesting in neglected corners or associating with ants), that "it is difficult to rear" *Ptinus* there, I tried a flank movement. The tinman made me a big tight, tin box. I filled it with herbarium, set an open can of bisulphide of carbon in it and left it shut up on a back piazza for a week. I had tried it for an hour with the beetles before. A few stragglers required a second treatment. But for nine years I have not seen a *Ptinus*.

Who has seen him?

S. ROYALSTON, MASS.